What is claimed is:

1. A manufacturing method of a semiconductor integrated circuit device, comprising a step of performing a cleaning process using a brush relative to a rotating wafer and thereby cleaning said wafer,

wherein at least one of a quantity of cleaning liquid flowing into said brush and a quantity of cleaning liquid supplied into the wafer from the outside of said brush is regulated in accordance with a cleaning state of said wafer.

2. The manufacturing method of a semiconductor integrated circuit device according to claim 1,

wherein at least one of the quantities of said cleaning liquids is regulated so that the interval between said brush and said wafer is kept constant.

3. The manufacturing method of a semiconductor integrated circuit device according to claim 1,

wherein the interval between said wafer and said brush is measured, and

wherein the number of revolutions of said wafer and at least one of the quantities of said cleaning liquids are regulated in accordance with a measurement result thereof.

4. The manufacturing method of a semiconductor integrated circuit device according to claim 1,

wherein at least one of the quantities of said cleaning liquids is regulated in accordance with a position of said brush on said wafer.

5. The manufacturing method of a semiconductor

integrated circuit device according to claim 1,

wherein when cleaning is performed while said brush is moved from the center of said wafer toward the outer circumference thereof, the quantity of the cleaning liquid flowing into said brush is regulated so as to slowly increased as said brush is moved from the center of said wafer toward the circumference thereof.

6. The manufacturing method of a semiconductor integrated circuit device according to claim 1,

wherein when cleaning is performed while said brush is moved from the center of said wafer toward the outer circumference thereof, the quantity of cleaning liquid flowing into said brush is regulated so as to be slowly increased in accordance with increase in the peripheral velocity of said wafer.

7. The manufacturing method of a semiconductor integrated circuit device according to claim 1,

wherein when cleaning is performed while said brush is moved from the center of said wafer toward the outer circumference thereof, the quantity of the cleaning liquid supplied from the outside of said brush to the wafer is regulated so as to be slowly decreased as said brush is moved from the center of said wafer toward the outer circumference thereof.

8. The manufacturing method of a semiconductor integrated circuit device according to claim 1,

wherein when cleaning is performed while said brush is

moved from the center of said wafer toward the outer circumference thereof, the quantity of the cleaning liquid supplied from the outside of said brush to the wafer is regulated so as to be slowly decreased in accordance with increase in the peripheral velocity of said wafer.

9. The manufacturing method of a semiconductor integrated circuit device according to claim 1,

wherein when cleaning is performed while said brush is moved from the center of said wafer toward the outer circumference thereof, the quantity of cleaning liquid to flowing into said brush is regulated so as to be slowly increased and the quantity of the cleaning liquid supplied from the outside of said brush to the wafer is regulated so as to be slowly decreased as said brush is moved from the center of said wafer toward the outer circumference thereof.

10. The manufacturing method of a semiconductor integrated circuit device according to claim 1,

wherein when cleaning is performed while said brush is moved from the center of said wafer toward the outer circumference thereof, the quantity of the cleaning liquid flowing into said brush is regulated so as to be slowly increased and the quantity of the cleaning liquid supplied to from the outside of said brush to the wafer is regulated so as to be slowly decreased in accordance with increase in the peripheral velocity of said wafer.

11. The manufacturing method of a semiconductor integrated circuit device according to claim 1,

wherein when said brush returns to a wait section, a discharge flow rate of demineralized water from the brush is increased while the wafer is cleaned.

12. The manufacturing method of a semiconductor integrated circuit device according to claim 1,

wherein when said brush returns to a wait section, said brush itself is cleaned while said brush is brought into contact with a removal member and brush-cleaning water is supplied to a contact portion thereof.

13. The manufacturing method of a semiconductor integrated circuit device according to claim 1,

wherein functional water having a function of removal of and prevention against foreign matters is discharged into said brush.

14. A manufacturing method of a semiconductor integrated circuit device, comprising a step of performing a cleaning process using a brush relative to a rotating wafer and thereby cleaning said wafer,

wherein a cleaning condition is regulated in accordance with a cleaning state of said wafer so that the interval between the wafer and the brush is kept at a constant value.

15. The manufacturing method of a semiconductor integrated circuit device according to claim 14,

wherein the interval between said wafer and said brush is measured, and the numbers of revolutions of said wafer and a quantity of cleaning liquid are regulated in

accordance with a measurement result thereof.

16. The manufacturing method of a semiconductor integrated circuit device according to claim 14,

wherein a quantity of cleaning liquid is regulated, in accordance with a position of said brush on said wafer.

17. The manufacturing method of a semiconductor integrated circuit device according to claim 14,

wherein when cleaning is performed while said brush is moved from the center of said wafer toward the circumference thereof, a quantity of cleaning liquid from said brush is regulated so as to be slowly increased as said brush is moved from the center of said wafer toward the outer circumference thereof.

18. The manufacturing method of a semiconductor integrated circuit device according to claim 14,

wherein when cleaning is performed while said brush is moved from the center of said wafer toward the outer circumference thereof, a quantity of cleaning liquid flowing into said brush is regulated so as to be slowly increased in accordance with increase in the peripheral velocity of said wafer.

19. The manufacturing method of a semiconductor integrated circuit device according to claim 14,

wherein when cleaning is performed while said brush is moved from the center of said wafer toward the outer circumference thereof, a quantity of cleaning liquid supplied from the outside of said brush to said wafer is

regulated so as to be slowly decreased as said brush is moved from the center of said wafer toward the outer circumference thereof.

20. The manufacturing method of a semiconductor integrated circuit device according to claim 14,

wherein when cleaning is performed while said brush is moved from the center of said wafer toward the outer circumference thereof, a quantity of cleaning liquid supplied from the outside of said brush to said wafer is regulated so as to be slowly decreased in accordance with increase in the peripheral velocity of said wafer.

21. The manufacturing method of a semiconductor integrated circuit device according to claim 14,

wherein when cleaning is performed while said brush is moved from the center of said wafer to the outer circumference thereof, a quantity of cleaning liquid flowing into said brush is regulated so as to be slowly increased and a quantity of cleaning liquid supplied from the outside of said brush to said wafer is regulated so as to be slowly decreased, as said brush is moved from the center of said wafer to the outer circumference thereof.

22. The manufacturing method of a semiconductor integrated circuit device according to claim 14,

wherein when cleaning is performed while said brush is moved from the center of said wafer toward the outer circumference thereof, a quantity of cleaning liquid flowing into said brush is regulated so as to be slowly

increased and a quantity of cleaning liquid supplied from the outside of said brush to said wafer is regulated so as to be slowly decreased, in accordance with increase in the peripheral velocity of said wafer.

23. The manufacturing method of a semiconductor integrated circuit device according to claim 14,

wherein after the wafer is cleaned and when said brush returns to a wait section, a discharge flow rate of demineralized water discharged from said brush is increased.

24. The manufacturing method of a semiconductor integrated circuit device according to claim 14,

wherein when said brush returns to a wait section, the brush itself is cleaned while the brush is brought into contact with a removal member and brush-cleaning water is supplied to a contact portion thereof.

25. The manufacturing method of a semiconductor integrated circuit device according to claim 14,

wherein functional water having a function of a foreign-matter removal and prevention against re-adhesion of foreign matters is discharged into said brush.

26. A manufacturing method of a semiconductor integrated circuit device, comprising a step of performing a cleaning process using a brush relative to a rotating wafer and thereby cleaning said wafer,

wherein said cleaning process is divided into a plurality of sub-cleaning steps, and

wherein at least one of a quantity of cleaning liquid

flowing into said brush and a quantity of cleaning liquid supplied from the outside of said brush is altered in accordance with each of said plurality of sub-cleaning steps.

27. The manufacturing method of a semiconductor integrated circuit device according to claim 26,

wherein said plurality of sub-cleaning steps are executed in the same cleaning process chamber.

28. The manufacturing method of a semiconductor integrated circuit device according to claim 26,

wherein said plurality of sub-cleaning steps are executed in separate cleaning chambers.

29. The manufacturing method of a semiconductor integrated circuit device according to claim 26,

wherein a quantity of the cleaning liquid from said brush is kept constant in said plurality of sub-cleaning steps, and

wherein one of the quantities of said cleaning liquids in such a sub-cleaning step that the peripheral velocity of said wafer is relatively high has a larger value than the other of the quantities of said cleaning liquids in such a sub-cleaning step that said peripheral velocity is relatively high.

30. The manufacturing method of a semiconductor integrated circuit device according to claim 26,

wherein a quantity of the cleaning liquid supplied from the outside of said brush to the wafer is kept

constant in said plurality of sub-cleaning steps, and

wherein one of the quantities of said cleaning liquids in such a cleaning step that the peripheral velocity of the wafer is relatively high has a smaller value than the other of the quantities of the cleaning liquid in such a sub-cleaning step that said peripheral velocity is relatively high.

31. The manufacturing method of a semiconductor integrated circuit device according to claim 26,

wherein the quantity of the cleaning liquid from the said is set so as to slowly increase in each of said plurality of sub-cleaning steps.

32. The manufacturing method of a semiconductor integrated circuit device according to claim 26,

wherein the quantity of the cleaning liquid supplied from the outside of said brush to the wafer is set so as to slowly decrease in each of said plurality of sub-cleaning steps.